

Claims:

1. – 12. (canceled).
13. (currently amended) A process for removing a coating from a surface region of a component, arranging the component and an electrode in an electrolyte; electrically connecting the component, the electrode, and a current generator; generating a pulsed current or pulsed voltage by the current generator; forming a sequence of current/voltage pulses by a plurality of different blocks with a block having a current pulse; combining a plurality of current/voltage pulses in sequence during the electrolytic coating removal; arranging an ultrasound probe within the electrolyte such that ultrasound excitation improves the hydrodynamics of the coating removal process and thereby assists the electrochemical reaction, and wherein a positive and a negative current/voltage pulses are used for the electrolytic coating removal; wherein a block is defined by a plurality of current pulses, pulse duration, pulse interval, current level, and pulse shape, applying at least a first block which includes at least two consecutive pulses of the same polarity with an interval between the pulses, and applying at least a second block which includes at least two consecutive pulses of the same polarity with an interval between the pulses, wherein the second block is different at least in the current level compared to the first block.
14. (previously presented) The process as claimed in claim 13, wherein a positive or a negative potential is applied to the component to generate a base current or base voltage.

15 – 17. (canceled)

18. (previously presented) The process as claimed in claim 13, wherein a block is matched to a constituent of an alloy to be removed in order to boost the removal of the constituent of the alloy.
19. (previously presented) The process as claimed in claim 13, wherein the coating removed is an of MC_xAl_yY, where M is an element selected from the group consisting of iron, cobalt or nickel.
20. (previously presented) The process as claimed in claim 13, wherein a base current is superimposed on the current pulses and the intervals.
21. (previously presented) The process as claimed in claim 13, wherein a base current is superimposed on the current pulses or the intervals.
22. (previously presented) The process as claimed in claim 13, wherein the current voltage pulse is a square wave shape pulse.
23. (previously presented) The process as claimed in claim 13, wherein the current pulse is a square wave shape pulse.
24. (previously presented) The process as claimed in claim 13, wherein the pulse times range from 1 to 10 milliseconds.
25. (previously presented) The process as claimed in claim 13, wherein a low base current during the pulse sequences and during the intervals is used.
26. (previously presented) The process as claimed in claim 13, wherein the plurality of current/voltage pulses are combined repeatedly.